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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/336,363	06/17/1999	KOJI MATSUYAMA	FUJO16.216	7540

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EXAMINER

KIM, KEVIN

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 01/27/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/336,363

Applicant(s)

MATSUYAMA ET AL.

Examiner

Kevin Y Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to rejected claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 2-4,7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al (US 6,188,682) in view of Sawahashi et al (5,768,306) both previously cited.

Consider claims 7 and 9. Referring to Fig.2, Takagi et al discloses a detection device comprising "a code generation unit" (24,14) for sequentially generating a set of candidate disspreading codes for a set of receive fingers, a correlation value obtaining unit (16) and "a detection unit" (31) for detecting a correct code "from among candidate codes generated by the code generation unit." The claimed invention is different in that a plurality of spreading codes are generated one at a time to find a desired spreading code, i.e., a code that yields a maximum correlation value. A storage unit is used store an input signal which is correlated with the plurality of spreading codes one at a time. However, Takagi et al teaches using a plurality of fingers for fast cell search, see col.6, lines 57-67. It should be noted that the use of a plurality of fingers increases cost and complexity of a receiver. Takagi et al further teaches that the number of receiving fingers can be changed depending on the received signal level. Thus, it would have been obvious to one skilled in the art at the time the invention was made to use only one

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receiving finger such that one spreading code is generated at a time for reducing the cost of a receiver and/or when the signal level is ~~storing~~<sup>✓</sup> enough not to require a number of receiving fingers. Regarding a storage unit for storing a transmitted signal, Referring to Fig.4, Sawahashi et al teaches a memory circuit (43) to ~~stored~~<sup>✓</sup> an input signal and correlate it with a plurality of shifted spreading codes one at a time. Thus, a storage unit would have been used to store the received signal until correlation with all the candidate spreading codes is finished. Though not described, the sliding correlator (16), see col. 9, lines 23-24, is generally comprised of an adder, a memory unit and a feedback for each chip/symbol to compute the correlation value between the entire input sequence and a candidate spreading code sequence.

Regarding claims 3 and 4 reciting a matched filter and a sliding correlator respectively, see Takagi et al at col. 9, lines 23-24.

Regarding claims 2, 10 and 12 further defining the correlation value obtaining unit such that it shifts the phase of the code, Takagi et al describes finding the timing at which the max correlation value is computed. See col.5, lines 46-49. Thus it would have been obvious to use a well known sliding correlator, as taught by Sawahashi et al, that shifts the phase/chip of the spreading code until a max/peak correlation is found.

Regarding claim 8, it is a matter of design choice to use a same memory unit for storage of the input signal and correlation values, specially in software implementation where different addresses would be used to different memory locations in a same memory unit.

Regarding claim 11, the sliding correlator accumulates correlation values for a plurality of symbols as shown by Accumulator (46) of a sliding correlator in Fig. 4 of Sawahashi et al.

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4. Claim 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al in view of Sawahashi et al, as applied to claim 7 above, and further in view of Shou et al (US 5,910,948, previously cited).

Takagi et al in view of Sawahashi et al disclose all the subject matter claimed except for when to use the matched filter or sliding correlator. Shou et al describes that a short code is detected by a matched filter and a long code is detected by a sliding correlator. Thus, it would have been obvious to one skill in the art at the time the invention was made to use matched filter for a short code detection or sliding correlator for a long code detection as taught by Shou et al.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

kvk



STEPHEN CHIN  
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